## AIR FORCE INSTITUTE FOR OPERATIONAL **HEALTH (AFIOH)**

## **Overall Lab Surveillance**

## **Total Specimens Collected**

· Collected in Week 01: 26

• Season Total: 767

### **Total Influenza Positive**

Identified in Wk 01; Cumulative

Influenza A: 13; 54

• Influenza B: 0: 5

## Total Influenza Subtyped Identified in Wk 01; Cumulative

Influenza A/H1N2: 0: 2

• Influenza A/H3N2: 0; 21

## Sentinel Site Lab Surveillance

#### **Total Specimens Collected**

· Collected in Week 01: 21

Season Total: 557

#### **Total Influenza Positive**

Identified in Wk 01; Cumulative

• Influenza A: 8: 32

• Influenza B: 0; 3

#### Total Influenza Subtyped

Identified in Wk 01: Cumulative

• Influenza A/H1N1: 0: 2

• Influenza A/H3N2: 0; 12

## Research Lab Surveillance

#### **Total Specimens Collected**

• Collected in Week 01: 0

· Season Total: 42

## **Total Influenza Positive**

Identified in Wk 01; Cumulative

• Influenza A: 0:0

• Influenza B: 0; 2

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# DoD Global Influenza Surveillance Program: Influenza Surveillance at AFIOH

Week 01 01-07 January 2006

## Current WHO Phase of Pandemic Alert: PHASE 3

\*Phase 3 = a new influenza virus subtype is causing disease in humans, but is not yet spreading efficiently and sustainably among humans. The designation of phases, including decisions on when to move from one phase to another, is made by the Director-General of WHO.

Source: WHO

## Influenza (02 Oct - Present)

## 59 influenza viruses

54 Influenza A; 5 Influenza B

9% of the completed specimens were positive for an influenza virus: 8.0% influenza A; 0.7% influenza B.

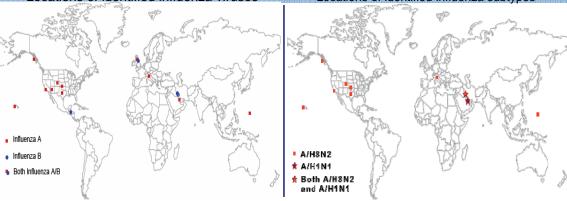
#### Influenza A Influenza B

B (99): 0 A (H1N1): B (01): 0 21 A (H3N2):

Un-subtyped: 31 Un-subtyped: 5

## Locations of identified influenza viruses

Locations of identified influenza subtypes



## **Vaccination Status**

91% of the Active Duty Air Force is currently vaccinated with the 2005-2006 northern hemisphere vaccine (as of 09 Jan 06).

## **Update: Human Avian Influenza (H5N1)**

Turkish labs have confirmed 15th case of human infection with H5N1. ~100,000 treatment courses of Tamiflu arrived in Turkey Friday evening. The Turkish gov't has launched an intensive public awareness campaign. NOTE: 2 deaths have been reported by WHO. Click here for more information. See pg 7 for a current situation of human H5N1.

## Influenza Outbreaks / News

The state of AZ is experiencing a high level of influenza activity. Luke AFB has disseminated appropriate educational material to base population.

HHS announces \$100M to accelerate state and local pandemic influenza preparedness efforts.

## AFIOH Report Overview

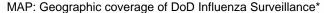
This report summarizes the status of all respiratory viral cultures processed at the AFIOH laboratory. which includes specimens collected from DoD beneficiaries at 40 tri-service sentinel sites and nonsentinel sites, as well as from foreign nationals through DoD overseas research laboratories (Armed Forces Institute of Medical Sciences [AFRIMS], the Naval Medical Research Center Detachment [NMRC-D], and the US Army Center for Health Promotion and Preventive Medicine West [CHPPM-

Please visit our website to review the "Sentinel Site Surveillance Report" for detailed information on our sentinel site program and specimens submitted by our sentinel sites.

## **Overall Laboratory Surveillance**

#### Week 01 overview

- Specimens "collected" in Week 01. To date, 26 specimens have been collected and received from 11 sites (7 sentinel and 4 non-sentinel). 12% (n=3) of these specimens have a completed result. All three completed specimens were positive for influenza A.
- Specimens "received" in Week 01. 88 specimens were received at AFIOH during Week 01 and are undergoing processing at this time. Specimens were collected from patients during Weeks 50-01.



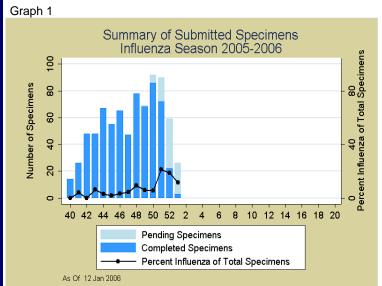


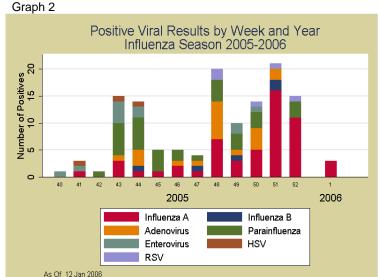
\* As determined from specimen submissions. Even though an entire location is highlighted, surveillance may be limited in scope

#### Season overview

Since 02 October 2005, 767 specimens were received by the AFIOH laboratory and 89% (n=680) have a completed result (Graph 1). Of the specimens with a completed result, 81% (n=550) were negative and 19% (n=130) were positive for a respiratory virus.

Of those positive for a respiratory virus, 42% (n=55) were influenza A, 4% (n=5) were influenza B; 15% (n=20) were adenovirus, 25% (n=33) were parainfluenza, 8% (n=10) were enterovirus, 2% (n=3) were HSV; and 4% (n=5) were RSV (Graph 2).

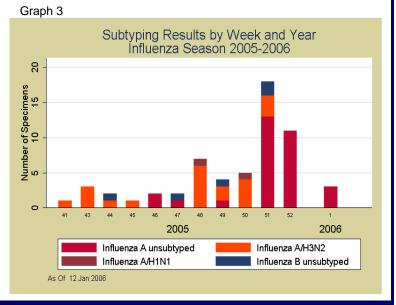




## Influenza overview

Nine percent (n=59) of the completed specimens were positive for an influenza virus: 8.0% influenza A; 0.7% influenza B (Graph 1).

Thirty-nine percent (n=23) of the influenza isolates have been subtyped to date: 21 influenza A/H3N2; 2 influenza A/H1N1 (Graph 3).



## Area of Responsibility (AOR)

Since 02 October 2005, influenza isolates identified from each AOR are as follows: NORTHCOM (66%), PACOM (17%), CENTCOM (9%), EUCOM (5%), and OTHER (3%). 100% of the isolates were submitted by sentinel sites in EUCOM, PACOM, and CENTCOM. Only 59% of NORTHCOM submissions were from sentinel sites. See Table 1. for a season overview of results from specimens collected and received at the AFIOH laboratory through Week 01.

Note: Sentinel sites are distributed among the AOR as follows: CENTCOM (13%), EUCOM (16%), NORTHCOM (32%), and PACOM (39%). The "OTHER" AOR category includes specimens collected from foreign nationals at the overseas research lab locations, which are not considered sentinel sites.

Table 1. Laboratory Results by Area of Responsibility (AOR), Week 01 and Season Totals.

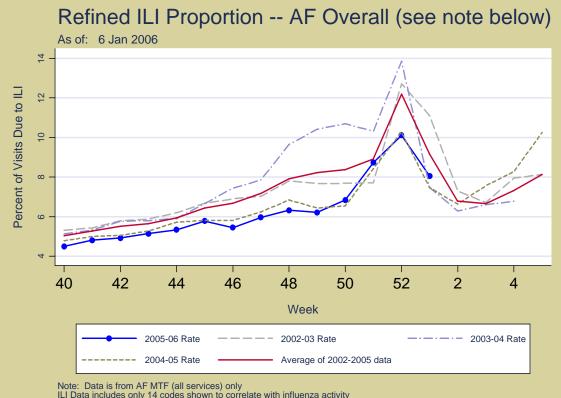
	Area of Responsibility										
Result	CENTCOM		EUCOM		NORTHCOM		PACOM		OTHER		ALL SITES
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season	ALL SITES
Influenza A		3		2	3	39		10			54
Influenza B		2		1						2	5
Adenovirus				3		12		5			20
Parainfluenza		1		9		20		2		1	33
Enterovirus		2		4		2		2			10
HSV		1		1						1	3
RSV						5					5
Negative		31		74		284		123		38	550
Pending	0	6	1	5	15	51	7	25			87
TOTAL RECEIVED	0	46	1	99	18	413	7	167	0	42	767

## Influenza-Like Illness (ILI)

Overview. Last update: 06-Jan. Influenza-like illness (ILI) activity among Air Force MTFs has increased 10.11% in Week 52, following a similar pattern as last season and notably lower than the average. It is important to note that data in Week 01 is not complete and may vary from next week's graph.

\*Influenza-like illness (ILI) activity is gathered from the Standard Ambulatory Data Registry (SADR). The data are cleaned and a summary total of ICD-9's that match a smaller, but more specific and sensitive list of ICDs than is in the ESSENCE tool, are presented (Graph 3). The Surveillance Team at AFIOH are in the process of creating a DoDwide ILI graph.

Graph 3. ILI Activity among Air Force Military Treatment Facilities



ILI Data includes only 14 codes shown to correlate with influenza activity

Total visits in weeks 48-51 of Dec 2005 less than 75% for average total for comparable weeks 2002-2004

## Influenza Surveillance

Sentinel Site Status. Fifty-nine percent (n=35) of the 59 influenza isolates were collected from sentinel sites, 37% (n=22) were from non-sentinel sites, and 3% (n=2) were from overseas research locations (Table 2).

FMP. Patients with a positive influenza result were 46% (n=29) active duty members, 29% (n=17) children, 12% (n=7) spouses, and 10% (n=6) non-DoD beneficiary (Table 3).

Vaccination. Of the 59 influenza-positive patients, vaccination status was identified on 27 (46%) patients. Of these, 7 (26%) were vaccinated > 2wks prior to their illness (1 patient was vaccinated 2 days prior to being ill). (Table 3).

Hospitalization/Quarters Status. 47% (n=28)of the patients with positive influenza had an accompanying influenza surveillance questionnaire. Six patients positive for influenza A (5 A/H3N2 and 1 A/H1N1) were placed on quarters for 24-72 hrs.

Travel history. One active duty member traveled to AZ in December and sought care within 2 days of return. ILI and influenza activity have been steadily increasing in the state of AZ.

Table 2. Influenza Demographics by SITE and REGION

			Newly Id	dentified	Sea	Total	
	Site by REGION	Sentinel Status	Flu A	Flu B	Flu A	Flu B	Influenza
West So	outh Central						
	Brooks City-Base, TX	Non-Sentinel	1	0	7	0	7
	Goodfellow AFB, TX	Non-Sentinel	1	0	1	0	1
	Lackland AFB, TX	Non-Sentinel	0	0	5	0	5
	Tinker AFB, OK	Non-Sentinel	1	0	4	0	4
Mounta	in						
	USAF Academy, CO	Sentinel	3	0	16	0	16
	Luke AFB, TX	Non-Sentinel	2	0	4	0	4
Pacific							
	CGS Ketchikan, AK	Sentinel	0	0	2	0	2
	Edwards AFB, CA	Non-Sentinel	0	0	1	0	1
	Elmendorf AFB, AK	Sentinel	0	0	1	0	1
	NMC San Diego, CA	Sentinel	0	0	1	0	1
	Tripler AMC, HI	Sentinel	0	0	1	0	1
Pacific I	Rim						
	121st Army, S. Korea	Sentinel	4	0	4	0	4
	Andersen AFB, Guam	Sentinel	0	0	2	0	2
Europe							
	Aviano AB, Italy	Sentinel	0	0	1	0	1
	RAF Lakenheath, U.K.	Sentinel	1	0	1	1	2
Deploye	ed						
	Al Udeid AB, Qatar	Sentinel	0	0	1	0	1
	Camp Arifjan, Kuwait	Sentinel	0	0	2	1	3
	Camp Buehring, Kuwait	Sentinel	0	0	0	1	1
Central	America						
	Honduras JTF Bravo	Research lab	0	0	0	2	2
		Total Influenza	13	0	54	5	59

Season

Table 3. Influenza Demographics: Age, FMP, Vaccination, and Hospitalization

Demographics	Newly Id	dentified	Sea	son	Demographics	Newly Identified		Season	
Age (years)	Α	В	Α	В	Vaccination Status*	А	В	А	В
0-5	1	0	7	0	Injection	0	0	5	1
6-19	2	0	12	1	Nasal Spray (FluMist)	0	0	2	0
20-64	10	0	30	2	Vax Type unknown	0	0	1	0
65 +	0	0	1	0	Not Vaccinated	12	0	20	0
Unknown	0	0	4	2	Unknown	0	0	4	2
OVERALL TOTALS	13	0	54	5	OVERALL TOTALS	12	0	32	3
Family Prefix Status	Α	В	Α	В	Hospitalization Status*	Α	В	Α	В
Military member/Sponsor	8	0	27	2	Hospitalized	0	0	0	0
Spouse	2	0	6	1	Quarters	0	0	6	0
Child	3	0	17	0	OVERALL TOTALS	0	0	6	0
Other/Unknown	0	0	4	2	*Describes sentinel site dat	a only. Da	nta is depend	lant upon c	ompleted
OVERALL TOTALS	13	0	54	5	influenza surveillance ques	tionnaires.	,	•	•

## Additional Influenza Surveillance: Army MEDCENs

The Army performs influenza surveillance at 6 Army Medical Center (MEDCEN) locations (Dwight David Eisenhower Army Medical Center [DDEAMC], Walter Reed Army Medical Center [WRAMC], Brooke Army Medical Center [BAMC], Madigan Army Medical Center [MAMC], Tripler Army Medical Center [TAMC], and Landsthul Regional Medical Center [LRMC]), two of which are included in AFIOH's sentinel site surveillance network (please see map to right).

The Army MEDCEN sites are major medical centers equipped with the capability of detecting respiratory viruses, including influenza. It is important to note that the methodology varies at each site (i.e., testing procedures include direct fluorescent-



antibody [DFA], various rapid antigen tests, culture, and polymerase chain reaction [PCR]) and reporting is routine, but varies from site to site (i.e., weekly, bi-weekly, monthly). The information reported and shared with AFIOH describes results from the individual MEDCENs and does not include demographic information at this time.

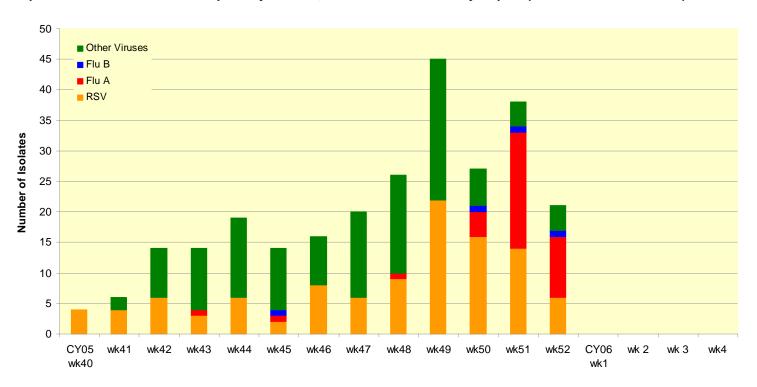
**Week 52 overview.** 65 specimens were collected and tested during Week 52 (20% [n=13] tested by LRMC; 80% (n=52) from BAMC. 25% (n=16) were positive for a respiratory virus (10 influenza A; 6 RSV).

**Season overview**: Since 02 October 2005, 1,366 specimens were collected and tested. Eighty-one percent (n=1,102) were negative and 19% (n=264) were positive for a respiratory virus (37 influenza A; 3 influenza B; 106 RSV; 30 parainfluenza; and 88 adenovirus). Of the specimens collected and tested, 2% were positive for an influenza virus (Graph 4.).

Subtyping: No data to report.

POC for Army MEDCEN surveillance is MAJ Wade Aldous.

Graph 4. Number of Positive Respiratory Viruses, ARMY MEDCEN Weekly Report (as of 30 December 2005).



## **Contributions to National and Global Influenza Surveillance**

It is important to note that although a country is highlighted, surveillance may be limited in scope. AFIOH provides surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.

Note: Map describes countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 8).



#### Data Sharing

AFIOH electronically reports data to CDC using the Public Health

Laboratory Information System (PHLIS). The data shared is incorporated into WHO's and CDC's influenza surveillance summaries. Additionally, data from Texas military sites are reported to the Texas Department of State Health Services (TDSHS).

## **CDC / WHO Influenza Surveillance**

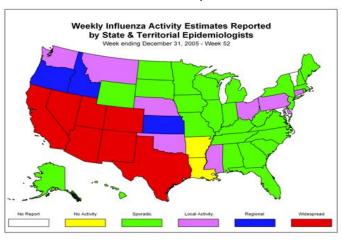
CDC reported a continued increase in influenza activity in the western US during Week 52. Of the specimens tested, 10.1% were positive for an influenza virus (see CDC map below).

NOTE: WHO website was inaccessible at the time this report was generated. Data displayed in WHO table and WHO map below reflects Week 51's data. Please see the WHO influenza activity table and CDC and WHO maps below.

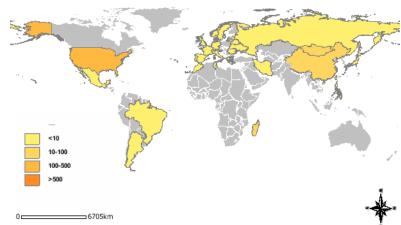
\*\*WHO data may vary slightly from week to week. It is important to note that AFIOH uses the current week's data on WHO's website. Please refer to WHO's website for detailed information regarding the WHO Influenza Surveillance data.

	A(H			(amapser H3) Season 0 0 0 0 23 0 0		typed) Season 0 2 6 0 26 0 1		typed) Season 10 13 8 2 49 0	Total Isolates 10 15 14 2 132 1
Argentina Australia Brazil Chile China Egypt France Germany	0 0 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Season 0 0 0 0 34 1 3 0 0	Wk 51 0 0 0 0 2 0 0	Season 0 0 0 0 0 23 0 0	Wk 51 0 0 0 0 2 0 1	Season 0 2 6 0 26 0	Wk 51 0 0 1 0 8 0	Season 10 13 8 2 49	10 15 14 2 132
Argentina Australia Brazil Chile China Egypt France Germany	0 0 0 0 5 0 0 0	0 0 0 0 34 1 3 0	0 0 0 0 2 0 0	0 0 0 0 0 23 0	0 0 0 0 2 0	0 2 6 0 26 0	0 0 1 0 8 0	10 13 8 2 49	10 15 14 2 132
Australia Brazil Chile China Egypt France Germany	0 0 0 5 0 0 0	0 0 0 34 1 3 0	0 0 0 2 0 0	0 0 0 23 0 0	0 0 0 0 2 0	2 6 0 26	0 1 0 8 0	13 8 2 49 0	15 14 2 132 1
Brazil Chile China Egypt France Germany	0 0 5 0 0 0	0 0 34 1 3 0	0 0 2 0 0	0 0 23 0 0	0 0 2 0	6 0 <b>26</b> 0	1 0 8 0	8 2 49 0	14 2 132 1
Chile China Egypt France Germany	0 5 0 0 0	0 34 1 3 0	0 2 0 0	0 23 0 0	0 2 0	0 <b>26</b> 0	0 <b>8</b> 0	<b>2</b> <b>49</b> 0	2 132 1
China Egypt France Germany	5 0 0 0 0	34 1 3 0	2 0 0 0	23 0 0 0	2 0 1	<b>26</b> 0	<b>8</b>	<b>49</b> 0	132 1
Egypt France Germany	0 0 0 0	1 3 0	0 0	0 0 0	0	0	0	0	1
France Germany	0 0 0 0	3 0 0	0	0	1			-	-
Germany	0 0 0	0	0	0	_	1		4	
	0	0	_	_		1	0	0	1
	0	_	U	0	0	0	0	1	1
Iran	_		0	0	0	0	1	1	1
Isreal		0	0	2	0	0	0	1	3
Japan	4	34	4	117	0	0	0	1	152
Latvia	0	0	0	0	1	2	0	1	3
	11	44	0	5	0	0	0	0	49
Mexico	0	23	0	63	1	131	0	4	221
Mongolia	0	0	9	10	12	17	0	0	27
Morroco	0	0	0	0	0	0	1	4	4
New Caledonia	0	0	0	2	0	4	0	0	6
Norway	0	0	0	1	1	1	6	11	13
Peru	0	0	0	0	0	10	0	1	11
Phillipines	0	0	0	0	0	0	0	3	3
Poland	0	0	0	0	0	1	0	0	1
Portugal	0	2	0	0	0	0	0	6	8
Slovenia	0	0	0	1	0	0	0	1	2
Spain	0	0	0	0	0	0	0	0	0
Sweden	0	0	0	4	1	1	1	3	8
Switzerland	0	1	0	0	0	0	0	2	3
Thailand	0	2	0	51	0	4	0	66	123
Tunisia	5	28	1	5	0	0	0	2	35
Turkey	0	0	0	0	0	1	0	4	5
U.K	1	2	1	3	0	0	6	12	17
U.S.A	0	4	94	427	60	224	1	35	690
TOTAL	26	178	111	714	79	432	26	245	1,569

CDC U.S. Influenza Surveillance Map<sup>1</sup>



WHO International Influenza Surveillance Map<sup>2</sup>



- 1. National Influenza Activity (CDC): http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm
- 2. International Influenza Activity (WHO): http://gamapserver.who.int/GlobalAtlas/home.asp

## **Avian Influenza Updates**

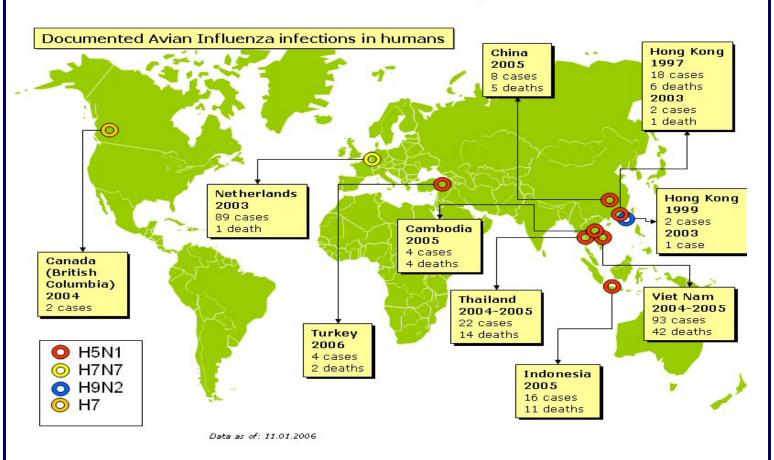
*Human Avian Influenza*. 147 cases of lab-confirmed avian influenza (53% case fatality rate). Table and map were gathered from the EUROPA website on 11 January 2006.

Reference: http://europa.eu.int/comm/health/ph\_threats/com/Influenza/ai\_current\_en.htm

## Current Situation of Avian Influenza and human cases related to the H5N1 virus subtype (as of 11 January 2006)

		Cumula	ative nu	mber of	confirme	1			
		Ca	ses			Dea	aths		
Country	2003	2004	2005	2006	2003	2004	2005	2006	Comments
Cambodia	0	0	4	0	0	0	4	0	No new case reported since 4 May 2005.
China (People's Rep. of)	0	0	8	0	0	0	5	0	One additional case reported in Hunan province. Symptoms onset on 24 December. Two patients reported in December have died.
Indonesia	0	0	16	0	0	0	11	0	Two new fatal cases confirmed: the first developed symptoms on 8 December, hospitalised on 13 December and died on 15 December; the second case had onset of symptoms on 9 December, hospitalised on 11 and died on 12 December. H5N1 endemic in poultry and widespread.
Thailand	0	17	5	0	0	12	2	0	One additional fatal case reported with onset of symptoms on 25 November, hospitalised on 5 December and died on 7 December. Several outbreaks in poultry reported to OIE on 3 November in three provinces.
Turkey	o	0	0	4	0	0	0	2	Four confirmed cases in Agri Province, of whom two have died. Another eleven cases have been reported by Turkey and await confirmation from WHO. Outbreaks in poultry active in eight provinces all over the country.
Viet Nam	3	29	61	0	3	20	19	0	One new case confirmed with onset of symptoms on 14 November. The case is now recovering
	3	46	94	4	3	32	41	2	
		14	47			78			Muse have of space (political purchase of deaths

Number of cases includes number of deaths. All cases are laboratory-confirmed. Bold text indicates changes from previous update



## DoD Global Influenza Surveillance Program Background

## **DoD-GEIS Influenza Surveillance Network**

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The program established an influenza surveillance network, which includes the Air Force Influenza Surveillance Network (global influenza surveillance established in 1976), Navy (recruit adenovirus surveillance established in 1996), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2] and the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

#### AFIOH Influenza Surveillance Network

In 1976, the US Air Force Medical Service began conducting routine lab-based surveillance of influenza throughout the world. Efforts were expanded when it became part of the DoD-GEIS influenza surveillance network in 1997. AFIOH manages the Air Force surveillance program that includes global influenza surveillance among DoD beneficiaries at 40 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyztan), several non-sentinel sites, two DoD overseas medical research laboratories (the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Center-Detachment [NMRC-D] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia, and the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that collect specimens from local residents in El Salvador, Guatemala, and Honduras.

## **Processing Methods**

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of the these isolates undergo molecular sequencing.

## 2005-2006 Trivalent Influenza Vaccine Composition

## Northern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

## 2006 Southern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)\*
- B/Malaysia/2506/2004

\*The currently used vaccine virus is A/New York/55/2004

This report was prepared on **06 January 2006**. For an expanded view of the information in this report, visit our website at <a href="https://gumbo.brooks.af.mil/pestilence/Influenza/">https://gumbo.brooks.af.mil/pestilence/Influenza/</a>. Also available on our website is a list of previous weekly surveillance reports, program information for sentinel sites (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data.

Please visit the DoD-GEIS website for an overview of influenza surveillance at all collaborating centers.

#### **AFIOH Contact Information**

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E-mail: influenza@brooks.af.mil



